



(12) **United States Patent**  
**Gold**

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(54) **VACUUM PLASMA SPRAYED COATING INCLUDING OXIDE DISPERSIONS**

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(58) **Field of Classification Search**

None  
See application file for complete search history.

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(57) **ABSTRACT**

A technique may include controlling a vacuum pump to evacuate a vacuum chamber to high vacuum; controlling a plasma spray device to deposit a coating on a substrate in the vacuum chamber using plasma spray physical vapor deposition; and controlling a source of a reactive gaseous species to introduce a controlled amount of the reactive gaseous species into the vacuum chamber during the plasma spray physical vapor deposition process. The reactive gaseous species may react with at least one constituent of the coating to form a dispersed phase in at least part of the coating.

**15 Claims, 3 Drawing Sheets**

